
PUBLIC MEETING
Department of Ecology
Remedial Investigation/Feasibility Study Report
for the Landsburg Mine Site

Tahoma Junior High
Maple Valley, Washington
March 27, 1996 - 7:00 p.m.

INTRODUCTIONS and MEETING AGENDA

By: Marianne Deppman, Public Involvement Specialist
Department of Ecology

OVERVIEW OF THE CLEANUP PROCESS AND PUBLIC INVOLVEMENT
OPPORTUNITIES

By: David L. South, Site Manager
Department of Ecology

SUMMARY OF REMEDIAL INVESTIGATION/FEASIBILITY STUDY FINDINGS

By: Bob Pancoast, Project Manager
Golder Associates, Inc.

Reported by:

Lori K. Haworth, Court Reporter

MS. DEPPMAN: Welcome. Thank you all for coming. It's always interesting to see how many people we'll get coming to this. Apparently, there was some confusion in the newspaper. I hope that didn't detract too many people. I'm Marianne Deppman, and I work for the Department of Ecology. And it sounds like there is plenty of echo in here. I hope you can hear fine with the mike. I'm going to facilitate and moderate this evening's meeting.

As I'm sure you're probably aware, the reason we're here is because the environmental study at the Landsburg Mine site in Ravensdale has been concluded, and a report of the findings has been issued to the Department of Ecology. Ecology is currently accepting comments from the public on that report. And in fact,

before we can complete the report, we do need to have a public comment period. So we're in that period right now.

What we're hoping to accomplish tonight is a couple of things. One is to share with you the findings of the report. And also, you're allowed to ask questions. And then if you would like, we'd like to give you an opportunity to comment formally for the record, on the document. So -- and it sounds like there is a couple of people who would like to do that.

So the agenda over here on the overhead is pretty straightforward. I'll introduce a few people. David South over here is the site manager for the Department of Ecology. He's going to talk about the model toxic control lab and the cleanup process and additional public involvement activities and give you a bit more detail about it, and comment.

Bob Pancoast will be here in just a second. He's with Golder Associates, who was the environmental consulting firm hired by the Potential Liable Parties to conduct the investigation, so he's probably the most familiar person with the site study, and he'll be giving a 25- or 30-minute slide presentation detailing the findings of the report.

And then we would just like to open it up to questions. And I'd like to keep the time on the question-and-answer period and the formal comment period flexible. It looks like we have two people right now who know they want to comment formally; is that right? Okay. You can certainly choose, at any time, to comment, but we'll take all your questions because we don't have a large crowd. We'll take any questions there are. And then we'll leave a half-an-hour where we can maybe take formal comment. And so we'll adjourn at 9:00 p.m.

If you'll notice, on the back of your agenda, there is a few more details. The comment period for the report is running March 13 to April 12. That means you have until April 12 to get formal comments to Ecology if you'd like to submit those. The documents are available at Maple Valley Library and at Department of Ecology Regional Office in Bellevue. You can send the written comments to David South at the address. And if you have any questions, please feel free to call me.

MR. SOUTH: As Marianne said, I'm Dave South. I'm with the Department of Ecology Toxic Cleanup Program, and I am the Ecology Site Manager for the Landsburg Mine site. The way this process basically works is, once you have a site reported and a site discovered -- that is, there are environmental issues that need to be addressed -- the site is assessed, a preliminary assessment, to provide that we have resources to work on. And obviously the Landsburg Mine is one of the chosen to go ahead with an investigation of environmental conditions.

As you're probably aware, the issue at Landsburg Mine is that in the '60s and '70s, industrial waste was dumped in the site trenches above an underground coal mine. We work with the Potentially Liable Persons, which are the corporations that have

leased or have ownership or operation or that have placed waste there. They have wound up, under law, for liability for addressing the site. And these are Palmer Coking Coal Company, PACCAR, Burlington Environmental -- what is it now?

UNIDENTIFIED SPEAKER: "Philip."

MR. SOUTH: Philip Environmental, Browning-Ferris -- I'm leaving one out. Burlington Northern Railroad. So they have worked together as a group called "Landsburg Steering Committee" to do the work and identify what the environmental conditions are for each mine, that kind of thing. That's what their consultants, or associates, will be talking about.

Ecology, I worked with them to develop a work plan to conduct the Remedial Investigation/Feasibility Studies. That's some jargon that you'll hear in this. To keep it short, "RI/FS." That year-around monitoring, so that's taking some time. We had public comment on that work plan when it was done, which was some time ago. I can't remember the exact date. Of course many of the RI/FS had to be conducted, as well as drill water samples; a host of things that Bob Pancoast will be talking about. And we are now in a comment period. You'll see public comment a lot.

The results of the investigation, which also include a listing of what are called alternatives to cleanup, in the -- and the way this works, once you identify the environmental issues, several alternatives are proposed to clean up and evaluate a number of arriving criteria.

The Potentially Liable Persons develop these and present them, as well as their preferred alternatives. Ecology will take your comment and, in consideration of your comment, will select an alternative. So your comment is very important to us. Although you will probably hear the preferred alternative tonight, that is the PLP's -- the Potentially Liable Persons' -- preferred alternative. And Ecology has not made any decision on the site.

We will take your comments and work with the PLP group and Landsburg Steering Committee to develop a Cleanup Action Plan which actually selects what will be done on the site. And once that's developed, we will come back out to you and get your comments again on the selection. Hopefully, by the time we'll get your comments, we'll know enough that the selection is acceptable and does not have to be modified. But we do retain the ability to modify it, based on public comment period, on the Cleanup Action Plan.

One of the things that's happening tonight, the original work plan was conducted under a thing called the Agreed Order. It's a legal agreement between us and the Ellensburg Steering Committee -- Ecology and the Landsburg Steering Committee -- that provides that the work be phased. And we would do further work if we needed to, to identify conditions to select an alternative.

The PLPs believe and we agree that we have sufficient information to select an alternative. So also, we're seeking comment tonight on a Consent Decree that sufficient investigatory

work be done, and we are now ready to proceed with a Cleanup Action Plan.

So there are comments in that regard, as well, and we will certainly accept those tonight. We will not talk about that, probably, any more tonight because as part of the comment period, the proposed RI/FS and Amendment Order is in the public repository, the library, and I have a copy here. That's about all I have to say. If there are any quick questions, I'll take them now. And if not, I will turn it over to Bob Pancoast. We have a little bit of shift in scenery to do, so bear with me.

MR. PANCOAST: Thank you very much. It's been a very long process to see where it's been going. Finally its results let us move on here. And so I'd like to present just a quick summary of what we found out during the investigation and the feasibility study conducted.

I first would like to introduce several people from Golder that are here. Myself, Bob Pancoast, who is the Project Manager for the Landsburg site for Golder Associates, Bob Long, Doug Morell, and Lee Holder are also here, and these are four of the key people that are involved in the Landsburg project for Golder.

So this is an excellent opportunity, if you do have questions, to be able to talk to some people that actually produced the report that many of you are looking at.

Golder has been retained by the Landsburg PLPs about 1992 to develop the work plan for the RI/FS, Investigation/Feasibility Study, and then to actually conduct the RI/FS out at the site. The Landsburg site, as many of you are aware, is located in this part of the state and is located, basically, north of the -- this is the little Summit area here, the Kent-Kangley Road, and the Summit-Landsburg Road goes to the north of the project site. The mine site, the Landsburg Mine site, actually cuts through this little hill that's here, and comes up to -- very close to the road, the Summit-Landsburg Road, on the north side, and basically stops at about the power lines that cut through here, for many of you who are familiar with the area.

To understand the Landsburg project, to really understand what we found about this site, you have to understand a little bit about geology. It's a very unique setting. We have, essentially, Eocene, about 55-million-year-old coal deposits that are going down into the coastal area here, and goes down Washington, that have been uplifted and, basically, folded in a series of folds as the continental margin, as additional material came on, and as the Cascade Range lifted.

What's very unique about this site is that the sediments really remain in kind of a layer cake, as many of you are familiar with kind of the sedimentary type rock deposits. These have been, essentially, lifted, so they are obviously occurring like the pages that are vertically standing up. And in fact, at the south side of the mine, it gets to about 63 degrees. But when we get to

the north end, they are about 88 degrees, almost 90 degrees vertically standing. So very, very unique geology for this area.

If we look at the site, looking at the surface, at the geology, there essentially is a series of three coal seams that outcrop in this area: The Frasier, the Rogers, and then the Landsburg. And we can see the surface outcrop -- or, the subsurface outcrop, through here. The Landsburg mine actually operated on two of these pole seams. The Landsburg mine starting in, I guess, the '40s and running to about '59, and then from '59 into the '70s, then on the Rogers Seam once that was discovered.

The mining on the Rogers Seam -- and you can see, this is the extent of the underground operations that ran from the portal to the portal -- resulted in a series of these little depressions; this, essentially, subsidence trench, which you can see on the surface above the Rogers Seam.

The history of the Rogers Seam mining basically started in 1959 or slightly before and consisted of a mine that, basically, was developed down to about 700, 750 feet in depth. And in December of '75 -- or, in '75, they completed the mining. And then in December of 1975, they basically abandoned the Rogers No. 3 mine, and this was done by blasting the airways and running bulldozers and, basically, restoring the contoured surfaces.

The mining was done kind of in an interesting way. They would, basically, drive at a decline down to the coal and then some -- cross hallways, and then the coal was extracted by driving up little shot holes and, basically, springing this block of coal out into the hallway and then pushing it down a gangway, if you haul by pine cars, out of the mine. So it's -- given the very vertical orientation of this coal seam, it was a very unique style of mining that's called booming, that is somewhat particular to this area. And it's also because there is some hard rock type mining. But this is, as far as I know, one of the only places that's used for coal mining.

As I say, this resulted in, basically, a mine that extended to about 750 feet in depth, which it exceeded -- was pretty close to sea level here. And it ran close to the Cedar River on this end, and down pretty close to the power lines. In fact, this is the -- the decline that comes from that power line portal.

As the coal was mined, it, basically, resulted in several voids. And as this material was removed down here, and even with some of the backfilling of debris rock and stuff, there was a settlement in this coal seam, and this resulted in a trench that was expressed at the surface as the rock underneath, basically, consolidated, or collapsed, and allowed the surface to, basically, drop into the position.

As many of you have seen on the aerial photo we have up here -- and feel free to look at that. This is an aerial photo running from the Cedar River up here on the north end, and the Pipeline Road, Summit-Landsburg Road through here. This is the Kent-Kangley Road down here at the bottom, and you can see this

expression of this trench that runs right through here. And this is the trench of the Rogers Seam right here.

In real life, this is kind of what it looks like, for some of you that haven't been up to that area. It's fairly narrow. You can see this is from side-to-side here in some spots. It runs 75 to maybe 125, 130 feet across at the wide points, and gets to be on the order of about 50 to 75, 80 feet in depth at the deep spots. One side has some shale and stuff, and the other wall is pretty much a hanging wall of this sandstone material. Some of these slabs have broken off from time to time. These slabs basically accumulate at the bottom and bridge certain locations.

Well, like anything, there is a hole in the ground. And way back in the '60s and the '70s, most holes in the ground were used for disposing of waste. And so this is, basically, a history of waste disposal that started in 1969 with a lot of industrial debris, including some drum waste and land-clearing debris. In 1971, there was a series of fires. It was about five fires that occurred during that year. Some of them multi-day fires that burned for an extensive period of time. And the flames were visible from quite a distance, from what I understand.

Basically, in '72, King County issued a permit allowing disposal of land-clearing debris. And trees, stumps, various types of materials -- branches, this type of thing -- was placed in the trench. In '78, some additional oily sludge was disposed, and then the operations were halted.

As Dave mentioned, Ecology has gotten involved in the project, basically, through modular -- the model toxic control lab. I'm sure many of you remember that was passed by a ballot in '88. Basically, the model toxic control lab established the standards of liability and provides that the Potentially Liable Parties from the investigation reimburse Ecology for some of their oversight.

As part of the mock process, this is, basically, the steps, as David alliterated. We look at site discovery and assessment which has occurred, the site investigation and evaluation of cleanup options, and this has occurred through the Agreed Order and the work plan and then the RI/FS report. So right now, we're at this point. We're looking at public comment on the final RI/FS report, to then look at the site cleanup, which is the next phase of the operation. And this starts with a Consent Decree with the PLP party, and the development of a Cleanup Action Plan, usually abbreviated "CAP." And this is, basically, a document that is prepared by Ecology that dictates how the cleanup will be performed at the site, various remedial design documents and construction activities that obviously occur in the cleanup.

And then following the actual machinery and working of the site, once everything is restored and cleaned up and remediation performed, we look at some sort of long-term performance monitoring. In other words, have things been done successfully, are there any emission problems, do we have a good, you know,

monitoring system in effect to provide a long-term performance of the selected remedial option.

Several previous investigations have been done at the site prior to Golder being involved and doing the RI/FS. This consisted of soil gas surveys; some surface water sampling that was done in the trench and the portals. The Department of Health did a private well sampling in the vicinity of the mine site to see if there was any impact. There has been a site hazard assessment. And then in 1991, the PLP group, basically, under an Expedited Response Action, ERA, removed 116 drums from the trench, and these were the drums that were pretty much readily accessible down at the bottom of the trench. It was a fairly significant operation with a tarp and a lot of operations and storage and overpacking of these drums. So a lot of the drums were, basically, removed -- that were easy to get to, were removed in this process. One-hundred-sixteen.

Basically, the conclusion of the previous investigations said that there were no chemicals detected above what's considered background in any of the ground water or surface water that left the site, and that the contamination seems to be confined to the mine within the trench, itself.

Based on this, we developed a remedial investigation. A remedial investigation, basically, defines the nature and the extent of the contamination -- where is it, what is it, how much is there, what's the quantity, where might it go -- and it evaluates, essentially, what is the potential risks posed by this contamination at the site.

The Landsburg Mine RI approach is a little bit unique in that we utilized the Black Box concept for evaluating the mine. The mine is just all very complex. It goes down 750 feet. There is all sorts of little passageways and things. And so the focus, in cooperation with Ecology and looking at this thing is, how could we really ascertain what's the effect of this previous waste disposal at the site. We, basically, went with the Black Box approach, which takes a mine and looks at what's potentially coming out, so that we can see if there is any exposure pathways of contaminants leaving the mine that may affect Ecology or human receptors.

The focus was on identifying potential chemicals migrating out of the mine. And it became readily apparent during the development of the work plan, the conceptual model of the Landsburg Mine site, that really, the primary pathway, the contaminants were going to get from the mine site and past the waste disposal site, to any kind of human receptors, mainly ground water, so the remedial investigation concentrates very heavily on determining if there is impacts to ground water within the area.

Key issues for the remedial investigation include the location of drums, near-surface hot spots. We looked at, was there potential for soil contamination from the interim action; Expedited Response Action. We wanted to understand the ground

water flow systems and the nature of contamination. We talked about, this was viewed as the major potential exposure pathway from the mine, to determine whether the ground water exiting the site poses a risk, and then we also had to consider mine stability issues. For whatever we're going to do with the site in terms of remediating it, obviously this mine, and potential subsidence, and instability issues become a major concern, and what can people do effectively to do something as a remedial action at the Landsburg site.

Summary of issues to be resolved: Does the site pose a risk.

This is obviously a major factor, or the major piece of data that comes out of an RI. Is there a risk to the site. And we evaluate the risk by comparing to MTCA standards. The state, basically, has published and has a formula for evaluating the levels of various contaminants, various compounds, chemicals that exist. And so we know if we have something that's above background level, or we know if we're getting some sort of exposure concentration that perhaps poses a risk. What pathways pose a risk, and what are the preferred alternatives to meet the cleanup standards.

A key concept in any RI/FS is to gather sufficient information to meet the data needs that we've talked about, while recognizing that removing all uncertainty is not necessarily achievable. And this is a very important fact that's been set out in the EPA guidance document, that we really have to do things to the best of our abilities, to evaluate. And we have a very comprehensive program that does that. But obviously, removing all uncertainty is something that's, really, not achievable.

The RI activities that were conducted as part of this remedial investigation were quite extensive. The PLP group decided to go in the first phase and do a very extensive investigation of this site. The tasks that were done include surface geophysics within the trench. We also used a lot of geophysics to determine where the coal seams were, for placing monitoring wells, to be able to intersect these coal seams. Air monitoring was conducted within the trench at various times during the year. We conducted a survey of all the wells, all the private wells that were located within the study area and, actually, on the periphery of the study area. And of these private wells, we selected 14 that were involved in a -- basically, a year-long monitoring program of the ground water.

We installed seven monitoring wells. These were also included in the yearly monitoring program. And we collected surface soil samples outside the trench. As you recall, a lot of the early actions concentrated on what was in the trench. Sampling drums; sampling soils in the trench. We want to see if there is any spread of initial contamination maybe outside of the trench in terms of violating the remedial options.

Surface water samples from mine portals; a fairly extensive geologic investigation. Backhoes obviously to drill data. Geologic vacuum deposits were performed on the site. The whole

area was flown for stereo aerial photography and photogrammetry work. And we, basically, had developed a graphic map of about two-foot contours for the site. That's been used as a tool in designing the remedial option. And everything -- all the sample locations, all the bore holes, everything was tied together in a geo -- grid with the surveyors.

We also looked at ecological and social data for the area, meteorological data, flows in the Cedar River, endangered species, various types of ecological and social data that you, basically, have to take into account under SEPA and under the development of remedial options for this site.

The surface geophysics and the air monitoring was actually performed down the trench once air monitoring data indicated that it was safe. The geophysics was done with electromagnetics which allowed us to, basically, boom the entire length of the trench with a magnetometer, electromagnetic setups that detect ferrous materials. And they literally would get a hit and then kind of look around a little bit, and they would find a piece of metal or a washer and dryer or things that would cause a disturbance in these magnetic fields. It's a very sensitive instrument. This was used, basically, to plot the profile of the entire trench, and it was to look for, where was all this ferrous materials; i.e., where were all those drums placed. So through the geophysics, we were able to determine the areas within the trench where there was high magnetic anomalies that were due to the placement of the 55-gallon drums.

As we talked about, the study area also included evaluating all the private wells. This is the study area for the site. You can see this is the trench area right here; the old mine subsidence. And this was the study area that was developed in the work plan, this really large dotted line area around that you see.

We did a survey. We went through Ecology's files, finding all the private water wells and actually drove around and interviewed people and talked with people and, basically, determined all the private water wells which are shown by these black dots up here within the area. Fourteen of these wells then were designated to be involved in the sampling program, and these are indicated by these little symbols right here, the little "pull-out" signs.

We also installed seven monitoring wells. There is a pair of deep and a shallow -- a deep pair of wells that are installed in the north end of the mine, intersecting the coal seam, there is a pair of wells, deep and shallow, that are installed within the coal seam at the south end of the mine, there is an additional well that's installed right here over this little rock bridge that crosses the trench, and then we installed a monitoring well in each of the two adjacent coal seams, in the Frasier and then in the Landsburg Seam, to see if there is anything migrating cross-strata into -- very highly conductive, these old mine workings.